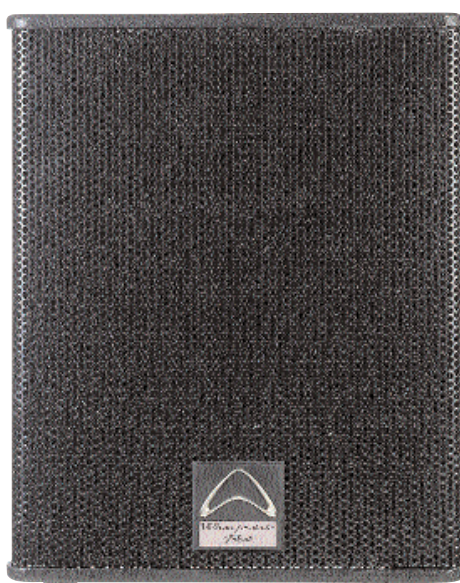




Wharfedale Pro Twin X Series User Manual



TWIN X SERIES MULTIPURPOSE LOUDSPEAKER SYSTEMS

Twin 8X, 10X, 12X & 15X coaxial full range multipurpose loudspeaker systems
Twin 15X sub & Twin 18X sub – sub bass cabinets



Declaration of Conformity

The following apparatus is manufactured in the China by Wharfedale International Limited of IAG House, Sovereign Court, Ermine Business Park, Huntingdon, Cambs, PE29 6XU and conforms to the protection requirements of the European Electromagnetic Compatibility Standards and Directives relevant to Domestic Electrical Equipment. The apparatus is designed and constructed such that electromagnetic disturbances generated do not exceed levels allowing radio and telecommunications equipment and other apparatus to operate as intended, and, the apparatus has an adequate level of intrinsic immunity to electromagnetic disturbance to enable operation as specified and intended.

Details of the Apparatus: Wharfedale Pro Loudspeaker

Model Number: Twin 8X, 10X, 12X, 15X, Twin 15X sub & Twin 18X sub

Associated Technical File: XXX

Applicable Standards:

EN 50081-1 Emission

EN 50082-1 Immunity

Electrical Safety: EN 60065

Signed:

Position:

Date: XX/XX/2004

For Wharfedale International Ltd

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Welcome

Thank-you for choosing a Wharfedale Pro Loudspeaker for your application. Since 1932, Wharfedale Loudspeakers have been at the forefront of loudspeaker technology. Our innovative designs combined with over seventy years of manufacturing audio systems make Wharfedale Pro products second to none.

Every component of every loudspeaker is designed and made in our own factories. We control all the variables to make sure every finished product complies with our standard of excellence.

We put in a lifetime of experience – you get out a lifetime of performance.

The Twin X Series

The Wharfedale Pro Twin X Series of loudspeakers are compact, high efficiency point source systems designed to meet demanding professional applications requiring both sonic quality and integrity. The Twin X Series is especially suited to high quality sound reinforcement applications where the power response and overall performance give exceptional results even in challenging acoustic spaces. Whether applied to a reverberant or dry acoustic environment the Twin X integrates successfully with the room for superior sound quality with a minimum of equalisation and tuning. Due to the co-axial design the Twin X also provides excellent stage monitoring in near field situations.

Features:

- Proprietary designed, high efficiency, high power Wharfedale Pro coaxial two-way full-range drive units (Twin 8X, 10X, 12X & 15X).
- Sophisticated crossover design enables smooth power and frequency response control through crossover region.
- Speakon™ connectors
- Protective full steel grille
- High power output and low distortion
- Trapezoidal array design
- Low profile for ceiling mounting or stage monitor use
- Pole mount socket for portable sound system use
- PRO-TECH™ Integral High Frequency Driver Overload protection*
- Strong cabinet construction of acoustically inert 18 mm birch plywood
- Available in black or white finish

* PRO-TECH™: The Twin X series speakers are equipped with The PRO-TECH™ System - a dynamic tweeter protection circuit, composed of an accurate and sensitive protection lamp. When high signal levels are present that may pose a dangerous overload for the tweeter coil the protection circuit will activate immediately to limit the power sent to the transducer.

Unpacking

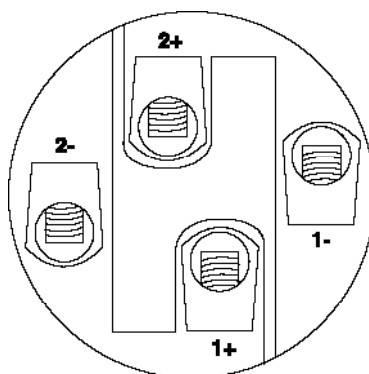
All Wharfedale products are fully tested and inspected before leaving the factory. After unpacking your loudspeaker please inspect it for any physical damage. In the unlikely event of damage caused in transit please contact your Wharfedale dealer immediately so that a written claim for damages can be made. Please retain the shipping carton and all packing materials in case the unit needs to be returned.

Cables and connections

All Wharfedale Twin X loudspeakers are fitted with a pair of 4-pole Neutrik Speakon™ Connectors. The two connectors on each loudspeaker are wired in parallel allowing two cabinets to be wired together from a single amplifier. When choosing speaker cable a professional grade of cable with an overall round sheath will be harder wearing and easier to handle than hi-fi figure-of-eight cables. Cables should always be coiled freely and not coiled over the hand and elbow which forces the conductors to twist within the outer sheath making the cable difficult to handle. Speaker leads should be made with a minimum of 2.5mm² csa (12 gauge) cable. However for cable runs over 50m a minimum of 4mm² (10 gauge) cable should be used.

Speakon Pin Assignment

- | | |
|----|---------------|
| 1+ | Full Range + |
| 1- | Full Range - |
| 2+ | No Connection |
| 2- | No Connection |



Amplification & Power Handling

Wharfedale Pro loudspeakers should be driven by professional quality amplifiers capable of providing adequate headroom when operating at high levels. A low powered amplifier with insufficient drive capability will not allow the full performance of the loudspeaker to be realised. A low powered amplifier is also more likely to be driven into clip and damage to your loudspeakers.

Amplifier clipping commonly occurs when amplifiers are used that are too small for the loudspeakers. If these amplifiers are driven beyond their maximum recommended limit the output from the amplifier is clipped. If a clipped signal is fed to a loudspeaker, it will not only detract from the sound quality, but can cause permanent damage. [Clipped waveforms tend to heat up the speaker voice coil while driving it out of the magnetic gap resulting in the loudspeaker overheating and failing]. Some amplifiers have a soft clip function which helps to round off the edges of clipped waveforms. However, an external limiter, or crossover with limiting built in, will stop amplifier clipping and ensure long life from your enclosures. [Note: Limiters must be adjusted to suit amplifier sensitivity. Refer to limiter or crossover manufacturer's literature.]

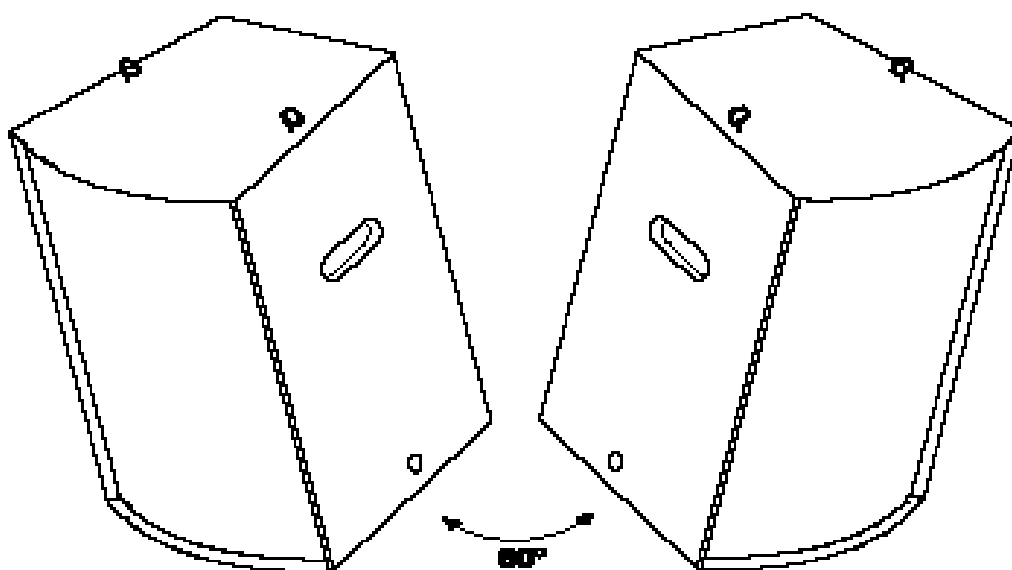
Equalisation

Wharfedale Twin X loudspeakers are designed to have a flat frequency response that does not require any equalisation to compensate for design inadequacies. Only small levels of equalisation may be needed to compensate for difficult acoustic environments. Over equalisation can reduce system headroom, and introduce phase distortion resulting in more problems than it cures. If equalisation is required then it should be applied gently and smoothly using a professional quality graphic or parametric equaliser.

Arraying

When building arrays of loudspeaker cabinets it is important that the coverage patterns of each loudspeaker do not overlap each other. This creates an effect known as comb-filtering resulting in an uneven frequency response that varies as you move around the room. It is much better to point each loudspeaker to a different area of the room rather than to face them all the same way.

To create a seamless wide (130 degree) horizontal coverage using two Twin X cabinets they should be arranged as shown below with an angle of approximately 50 degrees between the cabinets. By placing the Twin X cabinets as shown minimal dispersion pattern overlap is achieved, guaranteeing an even frequency response throughout the listening area. It is also possible to stack the cabinets vertically where greater vertical dispersion is required.



Rigging

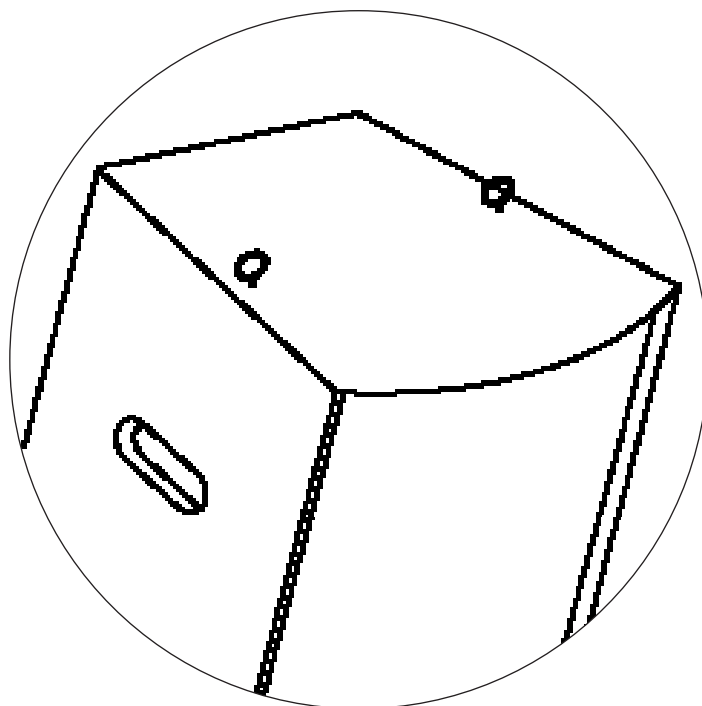
The installation of Wharfedale Pro loudspeakers should only be carried out by fully qualified installers, in accordance with all the required safety codes and standards that are applied at the place of installation.

Whenever a Wharfedale Pro loudspeaker is fixed in an installation the installer must ensure that the fixing method used is capable of safely and securely supporting the load. Secure fixings to the building structure are vital. Seek help from architects, structural engineers or other specialists if in any doubt.

As a minimum safety requirement the industry design standard of 5:1 is recommended. Therefore to suspend a 20kg loudspeaker the suspension method must be rated for at least 100kg, (5 times 20kg). This applies to static systems only. In addition to the primary fixing method a secondary "safety" fixing should also be employed should the first fixing fail.

WARNING: As the legal requirements for flying change from country to country, please consult you local safety standards office before installing any product. We also recommend that you thoroughly check any laws and bylaws prior to commencing work.

All Wharfedale Twin X loudspeakers are fitted with M10 flying inserts. One of the simplest and most reliable methods of flying a loudspeaker cabinet is to use eyebolts screwed into these M10 inserts. Various types of eyebolts are available but for the purposes of suspending a loudspeaker cabinet on only a forged shoulder eyebolt with product traceability should be considered. Always use eyebolts according to the manufacturer's instructions.





TWIN X SERIES MULTI-PURPOSE LOUDSPEAKER SYS-

Specifications

Model name	TWIN 8X	TWIN 10X	TWIN 12X	TWIN 15X
Features	8" coaxial	10" coaxial	12" coaxial	15" coaxial
Freq resp +/- 3 db	65-20k	60-20k	55-20k	45-20k
Sensitivity 1w@1m	94dB	96dB	98dB	99dB
Nom coverage Horiz.	60	70	70	70
Nom coverage Vert.	60	70	70	70
Power:	IEC noise 6db crst			
Continuous	100	150	200	300
Music	200	300	400	600
Peak	400	600	800	1200
Max spl peak	120dB	124dB	127dB	130dB
Nom impedance	8 Ω	8 Ω	8 Ω	8 Ω
Product dimensions				
H	373	434	496	562
W	288	322	362.5	454
D	250	319	364	422
Carton dimensions				
H	432	496	558	624
W	339	374	418	475
D	311	376	418	508
Weight Net	11.2KG	15.5KG	17.8KG	27KG
Weight Gross	13.2KG	17.8KG	19.8KG	30KG
L F driver size	8"	10"	12"	15"
HF SECTION:				
Coil size	2"	2"	2"	2"
Exit size	1"	1"	1"	1"
HF Diaphragm matl	titanium	titanium	titanium	titanium
Phase plug type	radial	radial	radial	radial
HF Protect Type	bulb	bulb	bulb	bulb
Crossover point	2.6kHz	2.5kHz	2.3kHz	2.4kHz
200Hz				
Finish	Black or white textured paint	Black or white textured paint	Black or white textured paint	Black or white textured paint
Construction	birch plywood	birch plywood	birch plywood	birch plywood
Handles qty	1	1	1	1
Rigging	12 x M10 flying inserts & one flying track on top	12 x M10 flying inserts & one flying track on top	12 x M10 flying inserts & one flying track on top	12 x M10 flying inserts & one flying track on top
Rubber feet	7	7	7	7
Grille	full steel	full steel	full steel	full steel
Stand adaptor	no	yes	yes	yes
Input connectors	two neutrik speakon	two neutrik speakon	two neutrik speakon	two neutrik speakon
High Pass Output	no	no	no	no

Measurements

TWIN X SERIES MULTI-PURPOSE LOUDSPEAKER SYS-



TWIN 15X SUB	TWIN 18X SUB	TWIN 15XSUB ACTIVE	TWIN 18XSUB ACTIVE
Folded Bass Horn Subwoofer	Folded Bass Horn Subwoofer	Powered Subwoofer	Powered Subwoofer
40-150Hz	35-150Hz	40-200Hz	35-200Hz
100dB	102dB	100dB	102dB
-	-	-	-
-	-	-	-
450	600	600	600
900	1200		
1800	2400		
133dB	136dB	128dB	130dB
4 Ω	4 Ω	4Ω	4Ω
668	720	668	720
460	538	460	538
618	692	618	692
714	777	714	777
492	739	492	739
650	585	650	585
45.5KG	62.5KG	60.0KG	70.8KG
48.5KG	64.5KG	63.0KG	72.8KG
15"	18"	15"	18"
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
150Hz	150Hz	Selectable 80, 100, 150, 200Hz	Selectable 80, 100, 150,
Black or white textured paint	Black or white textured paint	Black or white textured paint	Black or white textured paint
birch plywood	birch plywood	birch plywood	birch plywood
2	4	2	4
10 x M10 flying inserts	10 x M10 flying inserts	None	None
4	4	4	4
part steel	part steel	part steel	part steel
yes	yes	yes	yes
two neutrik speakon	two neutrik speakon	XLR x 2	XLR x 2
yes (one neutrik speakon@ 80Hz)	yes (one neutrik speakon@ 80Hz)	No	No



Part Number	Description
TWIN12-DIA	Twin 12 diaphragm
TWIN12-F9	Twin 12 full range bass drive unit
TWIN12-FEET	Twin 12 feet
TWIN12-XO	Twin 12 crossover assembly
TWIN12/G	Twin 12 grille
TWIN15SB-DO79	Twin 15SB woofer
TWIN15SB-XO	Twin 15SB crossover assembly

[illegible]

Wharfedale Pro Limited Warranty*

Wharfedale Twin X Series loudspeaker systems are warranted to the original end purchaser against manufacturing or materials defects for a period of three years from the original date of purchase. Faults arising from misuse, unauthorised modifications or accidents are not covered under this warranty. No other warranty is expressed or implied.

In the event of malfunction, contact your authorised Wharfedale Pro dealer or distributor for information.

*Be aware that warranty details may differ from country to country. Contact your dealer or distributor for information. These terms do not infringe your statutory rights.





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www.wharfedalepro.com

Wharfedale Pro reserves the right to alter or improve specifications without notice.
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